

two feet.

The valve for the chute flushing equipment shall be located for convenient use. The ceiling space between shaft walls and the discharge end of the chute shall be sealed to prevent odors from leaking into the enclosing shaft space.

MS s 144.56; 144A.02 to 144A.08

#### 4660.7300 OVERHEAD PIPING, NEW CONSTRUCTION.

Overhead piping shall not be exposed in dietary areas, clean supply and clean linen areas. Overhead sanitary waste lines in these areas shall be avoided.

MS s 144.56; 144A.02 to 144A.08

#### 4660.7400 PROTECTION RAILINGS, NEW CONSTRUCTION.

Protection railings, 42 inches high, shall be provided in accordance with the requirements for guardrails in chapters 1300 to 1365, the State Building Code, 1971 edition. The provision shall include railings for top landings of stairs, and window wells and open air shafts in areas accessible to patients or residents.

MS s 144.56; 144A.02 to 144A.08

#### 4660.7500 WALLS.

Subpart 1. Existing and new. Wall finishes in living and service areas for patients and residents shall be smooth, washable and/or cleanable. Colors shall be light and cheerful. Walls in areas subject to local wetting shall be provided with a hard, nonabsorbent surface in accordance with chapters 1300 to 1365, the State Building Code, 1971 edition. Walls in high humidity areas shall be provided with a water resistant finish. The juncture at floors and walls in dietary areas shall be sealed or coved.

Subp. 2. New construction. The juncture at floors and walls shall be coved in all areas used for food preparation and storage of prepared foods.

MS s 144.56; 144A.02 to 144A.08

#### 4660.7600 ELEVATORS IN NEW CONSTRUCTION.

The following applies to nursing homes only. At least one elevator shall be a hospital-size elevator. The inside cab dimension shall be at least five feet wide and seven feet deep. The car doors shall have a clear opening of at least three feet, eight inches.

MS s 144.56; 144A.02 to 144A.08

#### MECHANICAL AND ELECTRICAL SYSTEMS

#### 4660.7800 PLANT OPERATION AND MAINTENANCE FOR EXISTING AND NEW CONSTRUCTION.

Subpart 1. General requirements. The physical plant shall be kept in a continuous state of good repair and operation with regard to the health, comfort, safety and well-being of the occupants in accordance with an established routine maintenance and repair program.

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Subp. 2. Walls, floors, and ceilings. Walls, floors, and ceilings shall be kept in good and acceptable repair at all times. They shall be of a type or finish to permit good maintenance including frequent washing, cleaning, or painting.

Subp. 3. Illumination. Lighting shall be provided and maintained throughout the facility in accordance with parts 4660.8410 to 4660.8560.

Subp. 4. Emergency electrical service. If an emergency electrical service is provided it shall be maintained in working condition. An emergency generator shall be operated and tested at frequent intervals.

Subp. 5. Electrical wiring and appliances. Electrical wiring, appliances, fixtures, equipment, and cords shall be maintained in a serviceable and safe condition. Light and power panels shall be properly indexed and locked when necessary. Radios, televisions, lamps, or clocks shall not be placed within reach of sanitary fixtures.

Subp. 6. Heating, air conditioning, and ventilation. The mechanical systems shall be operated to maintain the necessary temperatures and air changes. Convectors, registers, ducts, and equipment shall be cleaned at regular intervals, and filters exchanged, when required. The heating system shall be capable of maintaining a minimum temperature of 75 degrees Fahrenheit in all living areas.

Subp. 7. Descaling of equipment. Caution shall be taken that acid or other chemical solutions do not enter the potable water supply during the descaling operation of mechanical equipment.

Subp. 8. Boiler water additives. Precautions shall be taken to assure that the type and concentration of boiler water additives is not harmful if steam is used for humidification or comes into direct contact with food.

Subp. 9. Brine Tanks. All brine tanks shall be provided with tight-fitting, overlapping covers.

Subp. 10. Elevators and other machinery. Elevators, dumbwaiters, conveyor systems, and other machinery shall be maintained so as to comply with the rules of the Minnesota Department of Labor and Industry. All dangerous areas and equipment shall be provided with proper safeguards and appropriate devices to prevent accidents.

Subp. 11. Periods of construction. Special precautions shall be taken to protect patients or residents from dust, harmful and obnoxious odors, dangers, and excessive noise during construction periods.

Subp. 12. Testing of fire safety system. The total fire alarm system and the fire fighting equipment shall be tested at regular intervals as required by the state fire marshal.

Subp. 13. Storage of hazardous materials. The storage of gasoline containers, gasoline powered equipment, liquid petroleum gas, fuel oil, paints and other flammable items shall be in accordance with the requirements of the state fire marshal.

Subp. 14. Grounds. The surrounding grounds within lot lines shall be maintained in an acceptable manner and be kept free of accumulations of refuse and debris. Driveways, walks, and outside steps or ramps shall be maintained in good condition for access and safe use at all times, including the winter months.

Subp. 15. Hot water temperature. Hot water supplied to lavatories and bathing fixtures shall not exceed 110 degrees

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Fahrenheit at the fixtures.

MS s 144.56; 144A.02 to 144A.08

4660.7900 BUILDING CONSTRUCTION, NEW CONSTRUCTION.

All new construction shall be in accordance with the requirements for Group D Occupancy in chapters 1300 to 1365, the State Building Code, 1971 edition.

MS s 144.56; 144A.02 to 144A.08

4660.8000 PLUMBING, NEW CONSTRUCTION.

Subpart 1. Installation. All plumbing systems shall be installed and tested in accordance with the requirements of chapter 4715, the Minnesota Plumbing Code, 1969 edition, and with these rules.

Subp. 2. Area drainage. Roofs, basements, tunnels, pits, shafts, areaways, courts, yards, and drives shall be properly drained to eliminate intrusion of rain water or ground water into the building. Floor drains in exterior areaways and similar installations shall be provided with a running trap located inside the building to prevent freeze-up in the winter.

Subp. 3. Sanitary fixtures. The numbers and special types of sanitary fixtures required in the various areas are covered under parts 4660.1300 to 4660.5810. The material used for sanitary fixtures shall be smooth and nonabsorbent with a nonslip bottom surface in bathtubs and showers. Flush valves in living areas shall be of a quiet operating type.

Subp. 4. Waste line interceptors. Interceptors for sand, plaster, rags, buttons, and other solids shall be provided on the waste line for sinks used for ceramics in activity areas and for washers in the laundry. Grease interceptors are not recommended.

Subp. 5. Valves. Each water service main, branch main, riser, and branch to a group of fixtures shall be valved. Stop valves shall be provided at each fixture. There shall be easy access to all valves, and if concealed, their location shall be marked.

Subp. 6. Booster heater. If the water system provides only 110 degrees Fahrenheit hot water, a booster heater shall be provided for the dishwasher and for the washer(s) in the laundry. It shall be located and sized to maintain the required temperature at the point of use. A pressure and temperature relief valve and a conductor pipe which discharges within ten inches off the floor shall be provided. It is recommended that separate hot water heaters for 110 degrees Fahrenheit and 180 degrees Fahrenheit be provided.

Subp. 7. Pipe insulation. Sufficient insulation shall be provided for all water and steam piping to assure proper functioning of the systems, provide safety against burns, and to prevent undesirable condensation or heat transfer in areas for patients or residents.

Subp. 8. Hot water supply. Circulating hot water shall be provided in all hot water mains and in risers more than three stories high to assure hot water at the fixtures. The hot water heating equipment shall have sufficient capacity and recovery to supply water at temperatures at the point of use as follows:

- A. patient and resident areas, 110 degrees Fahrenheit;
- B. mechanical dishwashing, 180 degrees Fahrenheit;

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C. washers in the laundry, 180 degrees Fahrenheit.

If a thermostatically controlled mixing valve is used, it shall be of the "fail safe" type, which prevents flow of hot water in case the cold water supply fails. Heaters shall be insulated and provided with a thermometer.

Subp. 9. Dishwashing machine. The dishwashing machine shall be of a commercial type equal to the standards established by Standard No. 3 of the National Sanitation Foundation (NSF), April, 1965 and shall be of a size that can accommodate food trays. The water supply line at the machine shall be provided with a pressure reducing valve, a pressure gauge, and a vacuum breaker. The rinse water flow pressure shall be maintained between 15 and 25 pounds per square inch (psi) at the machine by the use of a pressure reducing valve. A pressure gauge shall be installed following the reducing valve. A recirculation system and pump shall be provided if the final rinse water heater is located more than five feet from the dishwasher. The drain shall be an indirect waste connection to a trapped floor drain, or it shall be a trapped connection to a branch with a floor drain without a backwater valve in the horizontal branch.

Subp. 10. Waste and vent piping restrictions. Waste lines over food preparation areas, food storage areas, clean storage areas, and electrical panels shall be avoided. Precautions shall be taken to protect these areas from possible leakage or condensation from overhead lines. Plumbing waste lines and vents shall not be located within ventilation plenums.

Subp. 11. Floor drains. Floor drains shall not be installed in areas for food storage nor shall they be directly connected to ventilation equipment or air supply plenums.

MS s 144.56; 144A.02 to 144A.08

#### 4660.8010 PLUMBING, NEW CONSTRUCTION FOR NURSING HOMES.

Subpart 1. Application. Subparts 2 to 4 apply to nursing homes only.

Subp. 2. Institutional fittings. Institutional fittings shall include: a mixing faucet, a gooseneck spout or other approved spout, wrist-action controls, and an open grid strainer on the waste in the lavatories.

The spout shall provide a minimum vertical distance of five inches from its discharge point to the rim of the fixture, and a minimum horizontal bowl clearance of seven inches between the discharge point and the inside face of the rim.

The blades on wrist-action controls shall not exceed four and one-half inches in length, except that handles on clinical sinks shall not be less than six inches long.

Subp. 3. Clinical sinks. Flushing rim service sinks or clinical sinks shall have an integral trap in which the upper portion of a visible trap seal provides a water surface. A bedpan-cleaning device shall be included at the clinical sink in soiled utility rooms.

Subp. 4. Sterilizer vent systems. All sterilizers requiring vapor vents shall be connected with a vapor venting system extending up through the roof independent of the plumbing fixture vent system. The vertical riser pipe shall be provided with a drip line which discharges into the drainage system through an air gap or open waste fixture. The connection between the fixture and the vertical vent riser pipe shall be made by means of a horizontal offset. Vent material shall be erosion and corrosion resistant.

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MS s 144.56; 144A.02 to 144A.08

4660.8200 HEATING AND COOLING, NEW CONSTRUCTION.

Subpart 1. Design and installation. All heating and/or cooling systems shall be designed and installed in accordance with the requirements of chapters 1300 to 1365, the State Building Code, 1971 edition. The heating system shall be capable of maintaining a temperature of 75 degrees Fahrenheit in all patient and resident areas. Areas shall be zoned according to use and exposure, and be provided with thermostatic temperature controls. Provision is recommended for humidification of up to 25 percent relative humidity.

Subp. 2. Isolation of major components. A means of isolating major sections or components in the heating system shall be provided. Supply and return mains, and risers of space heating systems shall be valved to isolate the various sections of each system. Each piece of equipment shall be valved at the supply and return ends. Any pump on which the heating system is dependent should be installed in duplicate for standby service in a nursing home.

Subp. 3. Controls and gauges. All valves and controls shall be placed for convenient access and use, and thermometers and gauges shall be mounted for easy observation.

Subp. 4. Heating elements. Heating elements shall be located so as not to interfere with beds in patients' or residents' rooms. Tubing and casing of gravity type heating convectors shall be mounted at least four inches above the floor and be provided with removable sturdy covers in order to facilitate cleaning.

Subp. 5. Forced flow room units. Cabinets for forced flow heating/cooling units shall be sturdy and shall be mounted either continuously along the floor with a tight fit or at least four inches above the floor. Outside air shall be filtered. The interior air grill for recirculation shall be located not less than four inches above the floor on floor mounted units. Fans or blowers shall be of a quiet operating type, and the fan or blower housing shall not be directly connected to the metal of the unit cabinet. It is recommended that recirculated air also be passed through the filter, and that the filter be replaceable from within the room.

MS s 144.56; 144A.02 to 144A.08

VENTILATION

4660.8300 DESIGN AND INSTALLATION, NEW CONSTRUCTION.

All ventilation systems shall be designed and installed in accordance with the requirements of chapters 1300 to 1365, the State Building Code, 1971 edition, and with these rules.

MS s 144.56; 144A.02 to 144A.08

4660.8310 VENTILATION REQUIREMENTS.

Subpart 1. Existing construction. Ventilation in existing facilities shall include mechanical exhaust ventilation in the following areas: kitchen; laundry; soiled linen collection room; soiled utility rooms; and toilets, except when private or semiprivate and provided with window ventilation. Ventilation is recommended for janitors' closets.

Subp. 2. New construction. Mechanical supply and exhaust ventilation shall be provided for all areas as indicated in part

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4660.9930 or 4660.9940. Areas not covered in this table shall be ventilated in accordance with the requirements in chapters 1300 to 1365, the State Building Code, 1971 edition. Areas indicated with equal or positive pressure relationship to adjacent areas shall be provided with tempered make-up air.

MS s 144.56; 144A.02 to 144A.08

4660.8320 FRESH AIR INTAKES, NEW CONSTRUCTION.

Fresh air intakes for ventilation systems shall be located not less than 25 feet away from a ventilation exhaust, combustion exhaust, driveway or parking area. The bottom of fresh air intakes serving central air systems shall be located as high as possible, but not less than four feet above grade, or, if installed through the roof, not less than two feet above roof level. Air intakes for individual room units shall not be less than one foot, six inches above outside grade. Any exhaust system or waste chute vent shall terminate not less than 25 feet away from windows that can be opened.

MS s 144.56; 144A.02 to 144A.08

4660.8330 HEIGHT OF REGISTERS, NEW CONSTRUCTION.

Registers for air supply or return shall be located not less than four inches above the floor.

MS s 144.56; 144A.02 to 144A.08

4660.8340 FILTERS, NEW CONSTRUCTION.

All outside air introduced into living and service areas of a facility shall be filtered. Return air to central ventilation systems shall be filtered.

MS s 144.56; 144A.02 to 144A.08

4660.8350 DIETARY AREA, NEW CONSTRUCTION.

The dietary area shall be ventilated separately. Ventilation hoods shall be provided for ranges and other heat-producing equipment in addition to the general ventilation. Grease extractors or filters shall be provided. Filters and grease drip pans shall be easily removable for cleaning and replacement. A separate exhaust from the mechanical dishwasher shall not satisfy the requirement for general ventilation of the dishwashing area. Exhaust ducts shall be provided with access panels for cleaning.

MS s 144.56; 144A.02 to 144A.08

4660.8360 LAUNDRY AREA, NEW CONSTRUCTION.

Air in the laundry shall be vented away from the finishing and ironing area and toward the extracting and washing area. The general air movement shall be from the clean area to the soiled area, and shall be of sufficient volume to remove steam, odors and excessive heat. Dryers shall be provided with a lint collector. Horizontal exhaust ducts shall be provided with access panels for cleaning. Spot ventilation for large heat-producing equipment such as dryers and ironers should be provided.

MS s 144.56; 144A.02 to 144A.08

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4660.8370 MECHANICAL ROOMS, NEW CONSTRUCTION.

Mechanical rooms below grade with equipment utilizing liquified petroleum gas shall be provided with continuous mechanical ventilation providing a pressure which is equal or greater than atmospheric.

MS s 144.56; 144A.02 to 144A.08

4660.8380 VENTILATION REQUIREMENTS FOR NURSING HOMES.

Subpart 1. Application. Subparts 2 and 3 apply to nursing homes only.

Subp. 2. Filters, new construction. When central air systems are installed, outside air for use in patient areas shall pass through filters rated at a minimum efficiency of 30 percent based on the National Bureau of Standards Dust Spot Test Method with Atmospheric Dust. Filter frames shall be durable and carefully dimensioned and shall provide an airtight fit with the enclosing ductwork.

Subp. 3. Sterilizer room, new construction. A separate room with a large autoclave shall be provided with supply and exhaust ventilation. If an autoclave is built into a separate equipment room, the equipment room shall be provided with exhaust ventilation.

MS s 144.56; 144A.02 to 144A.08

ELECTRICAL SYSTEMS

4660.8410 ELECTRICAL SYSTEMS, INSTALLATION AND EQUIPMENT FOR NEW CONSTRUCTION.

All electrical installations and equipment shall be in accordance with the requirements of chapters 1300 to 1365, the State Building Code, 1971 edition, and with these rules.

MS s 144.56; 144A.02 to 144A.08

4660.8420 DISTRIBUTION PANEL BOARDS.

Subpart 1. Existing and new. All circuits in light and power panels shall be identified with a typewritten index. It is recommended that doors on electrical panel boards accessible to patients or residents be equipped with a lock.

Subp. 2. New construction. Lighting and appliance panel boards shall be provided for the circuits on each floor, except for emergency system circuits.

MS s 144.56; 144A.02 to 144A.08

4660.8430 CORRIDOR RECEPTACLES, NEW CONSTRUCTION.

Single receptacles on a separate circuit for equipment such as floor cleaning machines shall be installed approximately 50 feet apart in all corridors and within 25 feet of ends of corridors.

MS s 144.56; 144A.02 to 144A.08

4660.8440 SWITCHES AND RECEPTACLES, NEW CONSTRUCTION.

Switches shall not be placed higher than 42 inches above the floor. Convenience outlets for electrical appliances shall

be located to avoid danger in wet areas.

MS s 144.56; 144A.02 to 144A.08

4660.8450 INTERIOR LIGHTING.

Subpart 1. Existing facilities. Each bedroom shall be provided with general illumination and a reading light for each occupant. General lighting levels measured 30 inches above the floor and special illumination at work surfaces shall not be less than:

A. 30 footcandles for all reading surfaces or locations;

B. 20 footcandles at work or activity surfaces in kitchen and laundry;

C. ten footcandles for all other areas, such as bedrooms, dining areas, dayrooms, bathrooms, toilets, corridors, and service stairways; and

D. five footcandles for exit stairways, mechanical equipment rooms, and storage areas.

Subp. 2. New construction. Interior lighting for living and service areas for patients and residents shall be provided in accordance with the minimum levels of illumination listed in part 4660.9900. Each bedroom shall be provided with general illumination and a separate reading light for each occupant. The required illumination levels are given in footcandle power. General illumination shall be measured 30 inches above the floor and special illumination at the height of the work or reading surface, or location.

Subp. 3. Recommended lighting levels. It is recommended that lighting levels for areas not covered in the regulations be provided in accordance with Illuminating Engineering Society Recommended Levels of Illumination, 1966 edition.

MS s 144.56; 144A.02 to 144A.08

4660.8460 FIRE ALARM SYSTEMS, EXISTING AND NEW.

Fire alarm systems and sprinkler systems shall be provided in accordance with the requirements by the state fire marshal. New construction shall be in accordance with chapters 1300 to 1365, the State Building Code, 1971 edition.

MS s 144.56; 144A.02 to 144A.08

4660.8500 APPLICABILITY.

Parts 4660.8510 to 4660.8560 apply to nursing homes only.

MS s 144A.02 to 144A.08

4660.8510 INTERIOR LIGHTING.

Subpart 1. Existing facilities. In addition to the lighting requirements in part 4660.8450, subpart 1, nursing and treatment areas shall be provided with the following illumination levels:

A. 30 footcandles at the charting desk and at the medicine preparation surface; and

B. 20 footcandles at work surfaces in the medicine

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storage room, utility rooms, physical therapy, and examination room.

Subp. 2. New construction. In addition to the lighting requirement in part 4660.9900, nursing and treatment areas shall be provided with the minimum levels of illumination listed in part 4660.9910. The required illumination levels are given in footcandle power. General illumination shall be measured 30 inches above the floor, and special illumination measured at the height of the work surface.

MS s 144A.02 to 144A.08

4660.8520 BEDROOM RECEPTACLES, NEW CONSTRUCTION.

Each patient bedroom shall have duplex receptacles on each side of the head of each bed. Receptacles on other walls shall be provided as required by chapters 1300 to 1365, the State Building Code, 1971 edition.

MS s 144A.02 to 144A.08

4660.8530 NIGHT LIGHTS, NEW CONSTRUCTION.

Each patient bedroom shall be provided with a night light.

MS s 144A.02 to 144A.08

4660.8540 NURSE CALL SYSTEM.

Subpart 1. Existing and new. An electrical nurse call system shall be provided in a nursing home. It shall register a call from the patient at the nursing station and activate a signal light by the bedroom door.

Subp. 2. New construction. A nurse call system shall cover patient and nursing service areas where indicated in part 4660.9920. Nurse calls or emergency calls shall be capable of being inactivated only at the points of origin. A central annunciator shall be provided where the door signal lights are not visible from the nurses' station.

A nurse call shall be provided at the head end of each patient's bed. It shall register a call from the patient at the nurses' station and activate a visual signal light in the corridor at the patient's door and a duty signal in all required service areas for nursing. In multi-corridor nursing units, additional visible signal lights shall be provided at corridor intersections.

An emergency call shall be provided in each patient toilet and in all areas used for patient bathing. If a pull cord is provided it shall extend to within six inches above the floor. A push-button type emergency call shall be installed at a height of 24 inches. An emergency call shall register a call from a patient at the nurses' station, and activate a duty signal in all required service areas for nursing. The emergency duty signal shall provide a visual signal light and an audible alarm.

If a nurse call system provides two-way voice communication, it shall be equipped with an indicator light at each call station which lights and remains lighted as long as the voice circuit is operating. Nurse calls of this type may be capable of being inactivated at the nurses' station.

MS s 144A.02 to 144A.08

4660.8550 PATIENTS' SECURITY SIGNAL, EXISTING AND NEW.

Exit doors leading directly to the outside which are not under observation from the nurses' station shall be provided with an automatic audible alarm system. Where a local alarm is not audible at the nurses' station, an electric exit alarm system shall register at the nurses' station or other assigned control area.

MS s 144A.02 to 144A.08

4660.8560 EMERGENCY ELECTRIC SERVICE, EXISTING AND NEW.

To provide electricity during an interruption of the normal electric supply that affects medical care, or safety of the occupants, an emergency source of electricity shall be provided and connected to certain circuits for lighting. The emergency system shall provide lighting for the nurses' stations, the telephone switchboard, the patient corridors, the exits, the boiler or heater room, the emergency generator, if provided; and it shall assure functioning of the fire alarm system. Emergency electrical service shall be provided by one of the following methods:

A. a battery-operated system with automatic controls and recharging if effective for four or more hours; or

B. an on-site emergency generator.

It is recommended that the emergency generator system include all items necessary for the functioning of the heating system. An automatic transfer switch is recommended.

MS s 144A.02 to 144A.08

4660.8610 CODES AND REGULATIONS, NEW CONSTRUCTION.

All construction, installations, and equipment shall conform to the following codes and standards, provided that the requirements of such codes or standards are not inconsistent with the requirements of these regulations.

A. State Building Code, chapters 1300 to 1365, 1971 edition. Available from the State Register and Public Documents Division, 117 University Avenue, Saint Paul, Minnesota 55155.

B. Minnesota Plumbing Code, 1969 edition. Available from the State Register and Public Documents Division, 117 University Avenue, Saint Paul, Minnesota 55155.

C. Equipment Standards by the National Sanitation Foundation:

(1) Standard No. 2, Food Service Equipment, April 1965;

(2) Standard No. 3, Spray-Type Dishwashing Machines, April 1965;

(3) Standard No. 4, Commercial Cooking & Warming Equipment, April 1970;

(4) Standard No. 5, Commercial Hot Water Generating Equipment, January 1959;

(5) Standard No. 6, Dispensing Freezers, July 1970;

(6) Standard No. 7, Food Service Refrigerators & Storage Freezers, April 1966;

(7) Standard No. 8, Commercial Powdered Food